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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

OCT 21 1994

95-PCA-016

Mr. David L. Lundstrom
Section Manager, 200 Areas
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West 4th Avenue
Kennewick, Washington 99336

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Dear Messrs. Lundstrom and Sherwood:

TRANSMITTAL OF THE 218 E-8 BORROW PIT DEMOLITION SITE CLOSURE PLAN, REVISION 1 (T-2-1)

The enclosed 218 E-8 Borrow Pit Demolition Site (218 E-8) Closure Plan, Revision 1, (T-2-2), and the 218 E-8 Borrow Pit Demolition Site Closure Plan Notice of Deficiency Comment Response Resolution Table are submitted by the U.S. Department of Energy, Richland Operations Office (RL) and the Westinghouse Hanford Company (WHC) for review by the State of Washington Department of Ecology (Ecology). Submittal of these documents by October 21, 1994, fulfills the agreement made by RL and Ecology during the Unit Managers' Meeting held August 16, 1994. The State Environmental Policy Act Checklist forms for the 218 E-8 Closure Plan, Rev. 0, November, 1992, have remained unchanged and will not be included in this transmittal. The Part A will be transmitted to the U.S. Environmental Protection Agency (EPA) and Ecology once it is certified by DOE-RL.

Copies of this transmittal will be distributed to representatives of your respective organizations as follows:

- D. L. Duncan, EPA
- F. Ma, Ecology, Kennewick
- Ecology Library, Lacey

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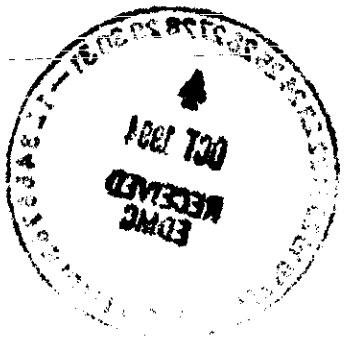

Should you have any questions or require any additional information regarding this submittal, please contact Ms. E. M. Mattlin of RL on (509) 376-2385 or Mr. F. A. Ruck III of WHC on (509) 376-9876.

Sincerely,

James E Rasmussen

James E. Rasmussen, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Operations Office

EAP:EMM

William T. Dixon, Manager
Environmental Services
Westinghouse Hanford Company

Enclosure:
1. 218 E-8 Closure Plan
2. 218 E-8 Comment Response Resolution Table

cc w/encl:
Administrative Records, WHC
B. Burke, CTUIR
D. Duncan, EPA
R. Jim, YIN
F. Ma, Ecology
D. Powaukee, NPT

cc w/o encl:
W. Dixon, WHC
R. Pierce, WHC
R. Stanley, Ecology
S. Price, WHC
F. Ruck III, WHC

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No.	Comments/Response	Concurrence
1.	**Deficiency.** The level of detail of several chapters in this closure plan is inadequate. **Requirement.** The closure plan must contain enough detail to allow the evaluation of whether: a. the activities described in the plan satisfy the regulations, or b. the conditions assumed in the plan adequately reflect actual conditions of the unit. RL/WHC Response: Comment is too general to address. The level of detail in this closure plan is similar to the level provided in other closure plans which are nearing final approval by Ecology. Ecology Response: Increasing the level of detail of the closure plan will reduce the amount of time and effort necessary to review and revise the document. As far as comparing the level of detail with other closure plans, thus far no closure plans have been approved and conditions can be written into the plan to address deficiencies noted by the regulators. For example, there is one specific term used throughout the closure plan which needs to be addressed more. The term is "action level." Although the term "action levels" is defined within the closure plan as "concentrations of analytes of interest that prompt an action . . . ," the term is not defined by WAC 173-303. As the closure plan addresses a RCRA unit, and to avoid confusion on this subject, delete the "action level" phrase. It should be noted that a definition for "cleanup level" is provided by WAC 173-340-200 which may be used by reference of proposed WAC 173-303-610 (scheduled to promulgated in Dec. 1993 to amend WAC 173-303-610 to include WAC 173-340-700 through 760 except 745).	

No.	Comments/Response	Concurrence

Ecology/RL/WHC Resolution: A parties have agreed that with the incorporation of the resolved NOD comments and DQO discussions that the level of detail in the closure plan will be satisfactory. Through the DQO process all parties agreed that the definition of Action levels are levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes* DOE/RL-92-24, Rev.1, U. S. Department of Energy, Richland Operations Office, Richland, WA. and Model Toxic Control Act (MTCA) (WAC 173-303) Method B residential levels.

2. **Deficiency.** Throughout the closure plan there are references to using only a mobile laboratory for sampling and analysis. It is not stated that this is an EPA accredited laboratory or if any secondary or follow up analysis will be conducted at an accredited laboratory.

The mobile laboratory is good for initial site characterization to determine where contamination is located but it can not meet SW-846 requirements.

The impact on the closure schedule if the mobile laboratory is not available or acceptable is not addressed.

Requirement. Correct the deficiencies of the text.

RL/WHC Response: Accepted. Revised text will propose to perform initial (investigative) sampling with analytical support to be provided by the onsite Environmental Analytical Laboratory (EAL), previously referred to as the "mobile laboratory." The EAL will be providing analytical level II support, as opposed to Level III capabilities that were planned for the laboratory at the time Revision 0 of the closure plan was prepared. Tables 7-1, 7-2, 7A-1 and 7A-2 identify analytes of interest for initial sampling.

No.	Comments/Response	Concurrence

A separate round of confirmatory sampling will be proposed in Revision 1 of the plan. Confirmatory samples will be analyzed by an offsite, Ecology-approved analytical level III laboratory. Subsequent to initial sampling and analysis and discussion of the results with Ecology, separate data quality objectives and analyte tables for confirmatory sampling will be prepared and documented as addenda to the closure plan.

Likewise, if soil removal is undertaken and verification sampling is to be carried out in support of soil removal, samples would be analyzed by an offsite analytical Level III laboratory. Separate data quality objectives and analyte tables would be developed for incorporation as addenda to the plan in that event.

If the EAL is not available to support sampling at the 218 E-8 Borrow Pit site, then sample analysis would have to be performed by an offsite contractor laboratory. The following schedule forecast would apply in the event:

- Sampling: 1 week (no change)
- Offsite analysis: 12 weeks (9 weeks longer than shown for EAL)
- Data Evaluation: 12 weeks (no change)

Offsite analysis would add 9 weeks to the initial (investigation) phase of soil sampling. Because the EAL is now offering Analytical Level II services, rather than Level III, an additional round of confirmatory sampling will be required. The breakdown for offsite analysis (listed above) will increase the schedule in Figure 7-2 by 25 weeks.

Ecology Response: Concur with part of the revisions of the closure plan to reflect the information provided in the response. However, the increase of 25 weeks is not acceptable according to the TPA. In TPA

No.	Comments/Response	Concurrence

Section 9.6.2, it is stated that non-rad waste analyses have a maximum turnaround time of 50 days. Also in TPA Section 9.6, the maximum validation and transfer times are 21 and 15 days, respectively. Thus, the maximum per Sample Delivery Group (SDG) should be 86 days. Revise the text accordingly.

Due to suspect reporting and record keeping of wastes managed at this TSD unit, Appendix IX analysis of 40 CFR part 264 will be required at this unit.

Ecology/RL/WHC Resolution: The mobile laboratory will not be used for these clean closure activities. Throughout the closure plan references to using the mobile laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Offsite laboratory should follow the negotiated laboratory schedule listed in the Tri-Party agreement.

3. **Comment.** The closure plan also cites many internal Westinghouse procedural manuals. It is not clear if these documents fulfill the EPA/Ecology requirements.

RL/WHC Response: Copies of requested WHC Control Manuals cited in the closure plan were furnished to an Ecology, Kennewick Unit Manager representative.

Ecology Response: Concur. Copies of WHC's manuals referenced should also be sent to the Department of Ecology's Kennewick office.

Ecology/RL/WHC Resolution: WHC's manuals must be assigned to a specific responsible person who is willing to be accountable for updating and maintaining control documents. Therefore no unassigned control reference manuals will be issued.

No.		Comments/Response	Concurrence
4.	1-1, 11	**Deficiency.** The text states that, "this event was a form of thermal treatment for spent or abandoned chemical waste." This is inconsistent with the waste description provided in chapter 3, Process Information. Chapter 3.0 describes the waste as excess or beyond shelf life. If this is the case, then the materials are not spent waste. The contradiction must be corrected because it affects the waste designation. **Requirement.** Clarify the specific source or process which generated the waste and the form (product versus spent/used material) in which it was disposed. Consult WAC-173-303 for designation guidance. RL/WHC Response: The chemicals detonated at the 218 E-8 site were not spent or abandoned. The text will be revised to state "the chemicals were determined to be in excess or beyond designated stock life," to be consistent with the description in Chapter 3, pg 3-1. Ecology Response: Concur with the revision of text to reflect the form in which the wastes were disposed. **Ecology/RL/WHC Resolution: Through the DQO process all parties agreed that the text would be revised to state " This demolition event was a form of thermal treatment for discarded explosive chemical products."**	
5.	1-1, 20	**Deficiency.** The plan does not present adequate information to determine if the waste has been properly designated. Information regarding the source of the waste (i.e., process derived from) and a distinction between wastes disposed in commercial form and those which were spent material is necessary to make such a determination. **Requirement.** See previous comment and WAC 173-303-070 for guidance.	

No.		Comments/Response	Concurrence

RL/WHC Response: See comment 4. Waste characterization per WAC 173-303 is summarized in Table T4-1. The waste codes in Table T4-1 also indicate that the chemicals were not spent.

Ecology Response: The waste codes in Table T4-1 do indicate that the material was not spent. But the Table fails to provide enough information to adequately designate the waste. The sources of information provided are inappropriate for the purposes of waste designation.

Ecology/RL/WHC Resolution: Table T4-1 doesn't attempt to explain waste designation or to provide data to allow waste designation. Waste designation Codes are based on WAC 173-303 and are formally available in the Part A, form 3. Table T4-1 will be revised removing all waste codes adding health-based limits.

6. 2-2, 1 **Deficiency.** The description of the demolition site does not provide adequate detail to allow potential exposure pathways to be evaluated.

Requirement. Provide description of depth to water table, soil characteristics, and any containment used during the detonation. Because this was a one-time event which does not appear to have been contained, it will be required that Hanford meteorological information, for the time of the event, be incorporated into the closure plan. Weather conditions may have influenced the dispersion of contaminants.

RL/WHC Response: The detonation took place at approximately 10:00 p.m. Weather conditions were approximately 45°F, winds less than 15 mph, and overcast.

No.		Comments/Response	Concurrence
		The surface soils were dry when the detonations were performed at this site. All chemicals detonated were contained in their original, closed containers until released by explosive forces. Depth from soil surface to groundwater is 305 feet. The text will be revised to reflect the proceeding information. Ecology Response: Concur with the addition to the text of the information provided in the response but the source of information must be provided. **Ecology/RL/WHC Resolution: Information has been incorporated into the text and is located in Chapters 3 and 5. Source of information are WHC documents, referenced in the revised text.**	
7.	2-2, 11	**Deficiency.** The description of the borrow pit as being essentially void of vegetation is not consistent with the photograph provided in Appendix 3A. In the photograph, several species of grasses and bushes are apparent. **Requirement.** Correct inconsistency. RL/WHC Response: Accepted. (Text will be revised.) Ecology Response: Concur. **Ecology/RL/WHC Resolution: Remove text referencing vegetation.**	
8.	2-2, 22	**Deficiency.** It is not clear how the exact location of the demolition site was determined in 1988, four years after the event. There is no	

No.		Comments/Response	Concurrence
		discussion of markers, maps, or surveys used to initially define the demolition site. **Requirement.** Explain how the location was determined. RL/WHC Response: At the time the fence was placed at the demolition site, there was still a depression in the soil from the blasting pit (Text will be revised to reflect this additional information). Ecology Response: Concur with the addition of this information in text. However, a map, which shows the location of the demolition site and its vicinity, should be provided in the next revision. Also the fence should be maintained to prevent further access and trespassing by non-TSD personnel. If the fence is not there anymore, a fence and warning signs should be placed around site. **Ecology/RL/WHC Resolution: Fence and warning signs are surrounding the site.**	
9.	2-2, 30	**Note.** This section of the closure plan, Security Information, may require revision due to the recent and upcoming security down grades on the Hanford Site. RL/WHC Response: Accepted. Text will be revised to reflect any new security changes to the Hanford Site. **Ecology Response: Concur.**	
10.	3-1, 1	**Deficiency.** A major deficiency of the plan is information on the actual demolition event. The process information does not provide a description of the event or associated actions. For example, was any post-treatment analysis conducted to verify treatment, or physical	

No.	Comments/Response	Concurrence

interaction with the site such as racking, shoveling, or watering down? Was waste containerized or free in pit during detonation? How were waste containers managed during and after the event? What color, how high, how wide was the explosion? Was material seen or heard hitting the ground?

Requirement. Provide a detailed narrative of the event and associated actions.
Address the following questions:

a. Was the waste co-mingled and poured directly on the ground?
b. How were waste containers managed during and after the event?
c. What were the environmental conditions at the time?
d. How, or was, waste inventory verified?
e. What post-treatment activities were conducted?

RL/WHC Response:
a. No container contents were poured onto the ground prior to detonation. The chemicals were detonated in their containers because opening the cap of the container could have initiated an explosion.

b. Prior to detonation, the containers were placed in a small pit on top of several sticks of nitroglycerin dynamite, wrapped in detonating cord (on a separated blasting cap), surrounded with a blasting agent. The charges were configured in a manner that channeled the explosive force downward.

There was no evidence of remaining explosives, containers or parts of containers after the detonations. The area was inspected the following morning (in daylight) to confirm that no chemicals or containers remained.

No.	Comments/Response	Concurrence

c. Refer to WHC response to NOD No. 6.

d. There are discrepancies on the inventory currently listed on Table T4-1. The correct inventory for the 218 E-8 site is:
2.75 kg. of 1-4 dioxane
16.7 kg. of 2-butoxyethanol
7.92 kg. of Isopropyl ether
.319 kg. of MEK peroxide

A checklist of the chemical inventory was prepared prior to beginning detonation activities. The potentially explosive chemicals were checked off the list as they were placed into a portable bomb containment vessel, for transportation to the demolition site. Information from the checklist was used to prepare the Dangerous Waste Annual Report.

e. Post treatment activities included a walk down to ensure that no explosives, chemicals, or containers remained after the shot.

The text will be revised to reflect the preceding information.

Ecology Response:

a. Concur with addition of this information in text.

b. Concur with addition of this information in text. Elaborate on the impact to waste deposition.

Note. Disposal of the remnants of a waste container in a sanitary landfill was inappropriate, due to the fact that without analysis it was not possible to determine if the container contained a listed waste or not. If it did the container would have been considered a listed waste.

No.		Comments/Response	Concurrence
		c. Refer to response on NOD number 6. d. Eliminating analytes without the evidences of legitimate documentation is not acceptable. In order to ensure potential contamination will not be missed, Appendix IX analysis of 40 CFR part 264 is required. e. Concur with addition of this information in text. **Ecology/RL/WHC Resolution: (d) The inventory has been corrected and approved by all parties. Text has been revised to reflect accepted inventory. All parties agree that Appendix IX analysis of 40 CFR part 264 will not be required at this unit.**	
11.	3-1, 8	**Deficiency.** First, the description of the "general" waste characteristic as being shock-sensitive or reactive is not appropriate. The major component of the waste (87%) was Phosphoric Acid, which is designated a corrosive and is neither shock-sensitive nor combustible. Second, this section of the plan describes the wastes as "excess or beyond designated stock life." Page 1-1, line 11 states that "this event was a form of thermal treatment for spent or abandoned chemical waste." **Requirement.** Correct or clarify the characteristic misrepresentation and specify if, or which, wastes were discarded chemical products. The process which generated the waste and the form (product versus spent/used material) in which it is disposed influences its designation. Consult WAC-173-303 for designation guidance. See comment 4. RL/WHC Response: See comment No. 34 and No. 4.	

No.		Comments/Response	Concurrence

Ecology Response: See NOD Nos. 34 and 4 responses.

Ecology/RL/WHC Resolution: All parties agreed that the text will be revised to state "This demolition event was a form of thermal treatment for discarded explosive chemical products". All parties have agreed on the inventory changes that remove Phosphoric Acid from the discarded explosive chemical products list.

12. 3-1, 11 **Deficiency.** It is said that the wastes were contained, but no container description is provided.

Requirement. Provide a detailed description of the number, material, volume of container(s), and a description of the container management practices. Were the containers, or pieces of containers, removed from the site? If so, how were they managed? State exactly how the wastes were placed in the pit.

RL/WHC Response: See comment No. 10.

Ecology Response: See NOD No. 10 response.

Ecology/RL/WHC Resolution: Detailed descriptions of the detonation event and the placement of waste were located in Chapter 3. In Chapter 3, lines 18-19, the text has been revised to read " The discarded explosive chemical products were detonated in their original metal and glass containers as a safety precaution." Table 4-1 list the amounts and number of discarded explosive chemical products.

13. 3-1, 13 **Deficiency.** Detonation materials are not included in the scope of sampling and analysis. Because these materials were derived from the treatment of dangerous waste and now are potentially mixed with dangerous wastes, they are now dangerous waste.

No.		Comments/Response	Concurrence
		Requirement. The explosives used to initiate the detonation (and any regulated products potentially generated from the detonation) must be incorporated into the sampling and analysis plan. Revise text accordingly. RL/WHC Response: The chemicals used to initiate the detonation will be listed in a separate table in Chapter 4. The sampling plan will be modified to reflect the additional analytes. Ecology Response: Concur with the inclusion of detonation materials in lists of analytes. Also include reaction and/or decomposition products as analytes. Additionally, due to suspect reporting and record keeping of wastes managed at this unit, Appendix IX analysis of 40 CFR part 264 will be required at this facility. **Ecology/RL/WHC Resolution: All parties agree that Appendix IX analysis of 40 CFR part 264 will not be required at this unit.**	
14.	4-1	**Deficiency.** This chapter provides some valuable information, but overall it is inadequate. **Suggestion.** Incorporate a column specifying the waste source (i.e., spent or in commercial form), the physical state, and action levels into Table 4-1 or generate a similar table. RL/WHC Response: Health-based cleanup thresholds will be provided in the next revision of this closure plan, for those constitutes for which appropriate toxicity information is available. Ecology Response: The response does not address the deficiencies noted. Because sections -700 through -760, except - 745, of MTCA is expected to be incorporated into the Dangerous Waste Regulations before	

No.		Comments/Response	Concurrence

implementation of the closure plan, it is appropriate to incorporate MTCA standards (see draft clean closure guidance). But the information regarding the waste source and physical state will be required to be incorporated into the closure plan.

Ecology/RL/WHC Resolution: Through the DQO process all parties agreed that to meet criteria for clean closure of the 218 E-8 Borrow Pit Demolition Site, the soil sampling and analytical results must verify that the levels of discarded explosive chemical products derived from the 218 E-8 Demolition Site operations are below action levels. Agreed action levels are defined as levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes* and Model Toxic Control Act (MTCA) Method B levels. Since Hanford Site soil background levels and MTCA Method B levels are the closure criteria agreed upon by all parties it reasonable that those levels would be provided in Table 4. The physical form of the discarded explosive chemical products and initiator will be indicated in Table 4-1.

15. T4-1 **Deficiency.** The function of the site is described as being for the detonation of shock-sensitive chemical waste. Comparing the relative quantities and characteristics of the wastes treated at the site indicates that Phosphoric Acid, a corrosive, comprised 87% of the total quantity of the waste treated at the unit. Phosphoric Acid is a liquid (unless in pure form) which is not shock-sensitive or combustible. Because of the characteristics of the acid, it would have been dispersed during the detonation event without altering its hazardous characteristics.

Requirement. Sampling and analysis for this substance and its products is excluded from the closure plan.

No.	Comments/Response	Concurrence

RL/WHC Response: See comment No. 34.

Ecology Response: See NOD No. 34 response.

Ecology/RL/WHC Resolution: Thermal treatment of Phosphoric Acid at the 218 E-8 site was erroneously reported in WHC Environmental Protection Surveillance and Compliance Inspection Reports. As indicated by WHC personnel at the UMMs of April 15, 1993 and May 12, 1993, the inventory is being amended: phosphoric acid will be deleted. The explosive chemical product inventory has been corrected and approved by all parties. Text has been revised to reflect the accepted inventory.

16. **Deficiency.** It is not apparent how the dangerous waste codes presented in Table T4-1 were determined or if they are correct. Several of the sources of information are not appropriate for the purpose of designating waste.

Requirement. Waste must be designated in accordance with WAC 173-303-070, Designation of Dangerous Waste, using current information sources.

RL/WHC Response: The chemicals were treated in their original containers and assumed to be either outdated or not needed. These chemicals were recently redesignated according to current WAC 173-303 regulations. Any assumptions concerning waste sources were conservative (i.e., in instances where the applicability of a code was uncertain, it was assumed to be applicable). Waste characteristics were derived from known physical properties and toxicity information available for the waste constituents.

Ecology Response: Concur with response. Revise the closure plan to reflect the information provided in the response.

No.	Comments/Response	Concurrence

Ecology/RL/WHC Resolution: Information on the discarded explosive chemical products has been incorporated into the text and is located in Chapter 3.

17. **Deficiency.** The detonation material is potentially regulated dangerous waste.

Requirement. Designate the material and products, and integrate into the cleanup process if determined to be hazardous waste.

RL/WHC Response: See comment No. 13.

Ecology Response: See NOD No. 13 response.

Ecology/RL/WHC Resolution: The chemicals used to initiate the detonation will be listed in a separate table in Chapter 4. The sampling plan was modified to reflect the additional analytes.

18. **Deficiency.** Dangerous waste number U098 (1, 1-Dimethylhydrazine) is in the Part A, but is not included in Table 4-1. This waste has both ignitable and carcinogenic properties according to the National Institute of Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances.

Requirement. Modify text and table to correct contradictions and correct deficiencies.

RL/WHC Response: 1,1-Dimethylhydrazine was never detonated at the 218 E-8 Site. Operator verification of the inventory that post dates submission of the Part A inventory has resulted in revision of the closure plan. See comment response 10d. for the precise inventory.

No.	Comments/Response	Concurrence

Deficiency. Sodium Azide is included in Table 4-1, but is not presented in the Part A. This is an Extremely Hazardous Waste with a Dangerous Waste number of P105, if disposed of in commercial form. The waste codes in Table 4-1 appear to contradict the representation of the wastes as outdated or excess chemicals. If this waste had been managed as an excess commercial product, it would carry the code P105.

Requirement. Modify text and table to correct contradictions and correct deficiencies.

RL/WHC Response: See Comment No. 42.

Deficiency. An asterisk is present on the "D" symbol in the key list following Table 4-1, typically indicating a reference to a clarifying statement, but no footnote or explanation is provided.

Requirement. Modify text and table to correct contradictions and correct deficiencies.

RL/WHC Response: Asterisk will be removed from Table 4-1.

Ecology Response: Refer first and second parts of the question to NOD nos. 10d and 42 responses respectively.

Concur with the correction of third part of the question.

Ecology/RL/WHC Resolution: Thermal treatment of sodium azide at the 218 E-8 site was erroneously reported in WHC Environmental Protection Surveillance and Compliance Inspection Reports. As indicated by WHC personnel at the UMMs of April 15, 1993 and May 12, 1993, the inventory is being amended: sodium azide will be deleted. The explosive chemical

No.		Comments/Response	Concurrence
		product inventory has been corrected and approved by all parties. Text has been revised to reflect the accepted inventory. All parties agree that Appendix IX analysis of 40 CFR part 264 will not be required at this unit.	
19.	5-1	**Deficiency.** The text states that the Tri-Party Agreement (TPA) authorizes ground water to be remediated under CERCLA without intermittent RCRA monitoring. **Requirement.** This is not correct. RCRA monitoring is required. The monitoring can be coordinated with CERCLA monitoring. See comment regarding number 76. RL/WHC Response: The text will be revised as follows: "The 218 E-8 Demolition site is not subject to the groundwater monitoring requirements of WAC 173-303-610 (7)(a) if there is not waste left in place, as is consistent with the preferred closure strategy (Chapter 6.0). The 218 E-8 Demolition site will not be operated, as a dangerous waste surface impoundment, waste pile, land treatment unit, or landfill as defined in WAC 173-303-645(1)(a). Therefore, if clean or protective closure can be attained, groundwater monitoring is not required." Ecology Response: a. Give the definition of "Protective Closure." b. 218-E-8 BPDS is regulated as a miscellaneous unit under WAC 173-303-680(4). The regulation requires that the unit must meet the postclosure care requirements of WAC 173-303-680(2), if the contaminated soils or ground water cannot be completely removed or decontaminated during closure.	

No.		Comments/Response	Concurrence
		Ecology/RL/WHC Resolution: Text referring to Protective Closure has been removed. Clean closure is the objective of this closure plan. The criteria for clean closure is that sample analysis results indicate the constitutes of concern are at or below action levels as defined in the closure plan. Postclosure monitoring is not required if clean closure is attained.	
20.	6-1, 19	**Deficiency.** Table 7-1 referenced here is said to take into account waste inventory, reaction products, and chemical degradation. The following sentence states that only analytes listed in Table 7-1 are traceable to 218-E-8 Demolition Site. Table 7-1 does not list all wastes detonated at the site or potentially regulated reaction or degradation products. **Requirement.** The closure plan must account for all dangerous wastes associated with the detonation site. This includes dangerous wastes generated from the treatment of the original wastes and materials used to treat the waste (i.e., the detonation materials). RL/WHC Response: Text on Page 6-1, Lines 19-23 will be modified to read as follows: "The basis for determining chemical ownership is the list of analytes of interest found in Chapter 7.0, Table 7-1, as qualified by the discussion in Section 7.2.2. Only those analytes identified in Section 7.2.2 and/or Table 7-1 are traceable to the 218 E-8 Borrow Pit Demolition Site activities." Table 7-1, as qualified by the discussion in Section 7.2.2, accounts for all dangerous wastes associated with the detonation site. Regarding the detonation materials, refer to NOD # 17 comment response. Ecology Response: Refer analytes traceable to the 218 E-8 Borrow Pit Demolition Site activity to NOD No. 34 response. Refer waste generated	

No.		Comments/Response	Concurrence

from the detonation event and the detonation materials to NOD No. 13 response.

Ecology/RL/WHC Resolution: Through the DQO process constituents of concern and analytical methods were identified and agreed to by all parties. The Sampling and Analysis Plan (SAP) provides details on specific agreements.

21. 6-1, 23 **Note.** It is stated, "if at any time an imminent hazard is posed at the 218-E-8 Demolition Site, an expedited response will result to ensure worker safety."

Requirement. Closure of the site must be conducted in a manner consistent with the closure plan. Deviation from the closure plan must be approved by Ecology.

RL/WHC Response: The word "expedited" will be replaced with the word "emergency" in order to clarify the sentence.

Ecology Response: Concur with the correction.

22. 6-1, 31 **Deficiency.** The plan states that background will be Site-wide background threshold values as defined in the Hanford Site Soil Background (DOE/RL 1992a). At present, this study is not complete and Ecology has not yet received final data packages for constituents of concern.

Requirement. Ecology must review and approve the Hanford Site Soil Background (DOE/RL 1992a) before the values can be implemented for closure.

No.		Comments/Response	Concurrence
		RL/WHC Response: Ecology has reviewed and approved the Hanford Site Soil Background Study (DOE/RL 1992a). Ecology Response: Ecology did receive The Hanford Site Soil Background. However, the document was considered incomplete. There is still a huge task ahead in order to finish the site-wide background analysis (see detail in the memo from Charles Cline, WA State Department of Ecology, to Steven Wisness, US DOE, dated May 10, 1993). Requirement. Ecology must review and approve the *Hanford Site Soil Background* (DOE/RL 1992d) for RCRA closures before the values can be implemented for closure. **Ecology/RL/WHC Resolution: Through the DQO process all parties have agreed to use Hanford Site Soil Background levels as one of the criteria for action levels. Also the Hanford Soil Background is listed as a closure performance standard in the Hanford Facility RCRA Permit, Section II.K.2.**	
23.	6-1, 34	**Deficiency.** The plan states that if concentrations exceed initial action levels, health-based action levels will be assessed. This is not consistent with clean closure standards. It is expected that during the next revision of the Dangerous Waste Regulations, WAC 173-303, that the Model Toxics Control Act (MTCA) will be incorporated into the closure requirements. To date no guidance or policy has been issued allowing this approach to be implemented during present closure activities. **Requirement.** If the concentration of waste at the site are below (or reduced to) background levels for listed or characteristic wastes, or to the designation limit for state-only waste managed at the site, clean closure will be achieved. If the site is closed with waste left in place post-closure requirements will be imposed.	

No.		Comments/Response	Concurrence

RL/WHC Response: In anticipating the incorporation of cleanup levels rather than environmental background levels, into the Washington State Department Waste regulations, RL contend it is appropriate to use health-based action levels.

Ecology Response: Refer the action level to NOD No. 1 response.

Ecology/RL/WHC Resolution: Through the DQO process, action levels were defined and agreed to by all parties, as levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes (DOE-RL 1993)* and Model Toxic Control Act (MTCA) (WAC 173-340) Method B levels.

24. 6-1, 37 **Deficiency.** This paragraph discusses the proposed method to determine cleanup levels. It is said that the health-based levels will be based on equations and exposure assumptions presented in the Hanford Site Baseline Risk Assessment Methodology (DOE/RL 1992B). This is not appropriate.

Requirement. Health-based levels, if permitted for closure, are determined from MTCA. See two previous comments.

RL/WHC Response: RL has attempted to establish a uniform health-based cleanup standard for a range of land-use eventualities (Hanford Site Baseline Risk Assessment Methodology [HSBRAM]; referenced in the closure plan). Preparation of this standard is sanctioned by the Tri-Party Agreement process (Milestone number M-29-03). It is intended to provide a risk assessment methodology that is consistent with current regulations and guidance. The method was developed specifically to evaluated risk for CERCLA remedial investigations and RCRA facility investigations. The health-based method of HSBRAM is similar to, and consistent with the Model Toxics Control Act (MTCA [WAC 173-340]).

No.		Comments/Response	Concurrence

HSBRAM has been accepted by the EPA and Ecology generally at the Hanford Site, and is consistent with the consensus of TPA project manager meetings and Ecology's standards will replace background in WAC 173-303. HSBRAM is proposed in the 218 E-8 Borrow Pit Demolition closure plan.

Ecology Response: HSBRAM has not yet been approved by Ecology. Only some of the risk assessment requirements of the MTCA Cleanup Regulation were incorporated in HSBRAM by DOE (see detail in the Memo from DOE to George Hofer, US EPA, and Roger Stanley, WA State Department of Ecology, dated May 5, 1993). Therefore, the health-based levels should be substituted, where appropriate, with MTCA cleanup levels.

Ecology/RL/WHC Resolution: Through the DQO process all parties agreed that to meet criteria for clean closure of the 218 E-8 Borrow Pit Demolition Site, the soil sampling and analytical results must verify that the levels of discarded explosive chemical products derived from the 218 E-8 Borrow Pit Demolition Site operations are below action levels. Agreed action levels are defined as levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part I, Soil Background for Nonradioactive Analytes* and Model Toxic Control Act (MTCA) Method B levels.

25. 6-1, 47 **Deficiency.** The plan states that health-based levels will be based on values that are current at the time of approval of this closure plan.

Requirement. Ecology must approve all health-based levels implemented for closure.

RL/WHC Response: Please see page 6-1, line 44-47. The term "values" in this sentence is referring to the oral reference dose and slope factors obtained for the Integrated Risk Information System (IRIS) (EPA 1991) database, these values may change as IRIS is updated.

No.		Comments/Response	Concurrence
		Ecology Response: Concur.	
26.	6-1, 50	**Deficiency.** This paragraph discusses remedial activities and coordination with CERCLA remediation if it is determined that the action levels are exceeded. **Requirement.** CERCLA coordination is acceptable if the time frame and other factors of remediation can be integrated with the RCRA closure. But the comprehensive RCRA closure will not be deferred to, or preempted by CERCLA remediation. If clean closure is not achieved, post-closure requirements will be imposed, including requirements to assure residual contamination will be addressed during CERCLA remediation. RL/WHC Response: Coordination is planned if clean closure is not achieved. RL would keep Ecology informed on this integration process whenever it occurred. Please clarify the statement that closure cannot be deferred until CERCLA remediation. Ecology Response: Refer the action level to NOD No. 1 response. If clean closure can not be achieved, postclosure requirements will be required regardless whether CERCLA remediation is available or not at that time. If the coordination between RCRA and CERCLA is planned for postclosure care, provide an explicit schedule in the next revision. **Ecology/RL/WHC Resolution: Through the DQO process all parties have agreed to develop a phase two investigation if the soil analysis results were determined to be above action levels. Text referring to the contrary has been removed.**	
27.	6-2, 36	**Deficiency.** The plan states that "actions will be/or have been taken". It is not clear which actions were conducted prior to preparation and approval of the closure plan.	

No.		Comments/Response	Concurrence
		Requirement. Actions previously conducted must be distinguished in order to evaluate the adequacy. RL/WHC Response: Any action that has been already completed will be noted in the text. Ecology Response: Concur with the correction. **Ecology/RL/WHC Resolution: Text has been revised to note completion dates of past activities.**	
28.	6-2, 43	**Deficiency.** This bullet states that the Hanford Site Baseline Risk Assessment Methodology implements WAC 173-304 (MTCA). **Requirement.** See comment 24. RL/WHC Response: See comment responses Nos. 22 and 24. Ecology Response: See NOD Nos. 22 and 24 responses. **Ecology/RL/WHC Resolution: Reference to Hanford Site Baseline Risk Assessment Methodology has been removed from text.**	
29.	6-3, 20	**Deficiency.** The plan states that the samples will be analyzed by an on-site mobile laboratory capable of performing to EPA Analytical level III standards. **Requirement.** See comment 2. RL/WHC Response: See comment response No. 2. Ecology Response: See NOD No. 2 response.	

No.		Comments/Response	Concurrence

Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples.

30. 6-3, 34 **Deficiency.** The plan states that contamination at the 218-E-8 Borrow Pit Demolition site is above the action level in the near-surface soils. The term near-surface is not defined or rationalized. It has not been justified why only near-surface sampling and analysis will be limited only to surface contamination.

Requirement. Removal of deeper contamination may be coordinated with CERCLA remediation, but investigation and planning can not be deferred. A plan will have to be developed and integrated into the closure plan.

RL/WHC Response: See comment response No. 44.

Ecology Response: Refer the action level to NOD No. 1 response. See also NOD Nos. 44 and 45 responses.

Ecology/RL/WHC Resolution: Reference to "near-surface" contamination has been removed from text. If levels of constituents of concern are above action levels then a phase two investigation will be developed by all parties concerned.

31. 7-1, 20 **Requirement.** "Substantially free" needs to be quantitatively defined.

RL/WHC Response: "Substantially free..." is defined in brackets on lines 21-24. As this information clearly indicates, the context is administrative, not quantitative.

No.		Comments/Response	Concurrence
		Ecology Response: Describe the instruments and methodologies used in the radiological survey in order to better understand the term "substantially free."	
		Ecology/RL/WHC Resolution: The text will be revised to state that the radiological survey was performed according to *Health Physics procedures manual* (WHC-IP-0692.A).	
32.	7-1, 31	**Requirement.** Explain analytical level III services as it applies to this closure. Specify if the mobile laboratory meets level III requirements.	
		RL/WHC Response: See comment response No. 2.	
		Ecology Response: See NOD No. 2 response.	
		Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples.	
33.	7-1, 33	**Deficiency.** The text states that portable field screening instruments will provide adequate information for devising and implementing appropriate remedial action.	
		Requirement. Specify if further sampling will be conducted if constituents are found at significant concentrations.	
		RL/WHC Response: Text is misquoted. Text reads "... the data obtained from soil sampling and analysis (possibly supplemented by data obtained with portable field screening instrumentation) will provide adequate information for devising and implementing appropriate remedial action."	

No.		Comments/Response	Concurrence

Confirmatory sampling (i.e., more elaborate sampling) is proposed to support a regulatory determination of clean closure. There is no technical need or justification for conducting "more elaborate sampling and analysis" to support a remedial action.

Ecology Response: The purpose of the plan is to close the demolition site rather than remediate it. In order to clean close the unit, the contaminated soil or ground water should either be removed or decontaminated, otherwise the postclosure care is required. The soil sampling and analysis should emphasize this.

Ecology/RL/WHC Resolution: Through the DQO process all parties have agreed to develop a phase two investigation if the soil analysis results were determined to be above action levels. Text referring to the contrary has been removed.

34. 7-1, 42 **Deficiency.** The closure plan states that it is necessary to have a general understanding of explosives and detonations in order to create a suitable soil sampling and analysis scheme. This is misleading because the major component of the waste detonated was a corrosive, Phosphoric Acid, which is non-combustible and non-explosive. When the detonation event occurred, this waste was probably dispersed over a larger area.

Requirement. Provide a discussion of the characteristics, impact of thermal treatment and final disposition of the Phosphoric Acid, in addition to the discussion presented.

RL/WHC Response: Thermal treatment of phosphoric acid did not occur at the 218 E-8 Borrow Pit site. Treatment of phosphoric acid at the 218 E-8 Borrow Pit site was identified in Rev. 0 of the closure plan based on erroneous reporting in the WHC Environmental Protection Surveillance and Compliance Inspection Reports. As indicated by WHC personnel in the

No.		Comments/Response	Concurrence
		Unit Managers' Meetings (UMM) of April 15, 1993 and May 12, 1993, the inventory is being amended; phosphoric acid will be deleted. Ecology Response: Due to suspect reporting and record keeping of wastes managed at the site, Appendix IX analysis of 40 CFR part 264 will be required at this unit. **Ecology/RL/WHC Resolution: The inventory has been corrected and approved by all parties. Text has been revised to reflect accepted inventory. All parties agree that Appendix IX analysis of 40 CFR part 264 will not be required at this unit.**	
35.	7-2, 28	**Note.** This paragraph discusses the possibility for the generation of by-products from the detonation event. **Requirement.** Incorporate regulated products into the analyte list. RL/WHC Response: See comment response No. 20. Ecology Response: See NOD No. 20 response. **Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. The Sampling and Analysis Plan (SAP) provides details on specific agreements. Table 4-2 will list detonation materials.**	
36.	7-2, 35	**Note.** This paragraph discusses the potential dispersion of waste from the detonation event. This factor will influence the final definition of the boundary. **Requirement.** Modify text to reflect this consideration.	

No.		Comments/Response	Concurrence

RL/WHC Response: See comment response No. 44.

Ecology Response: See NOD Nos. 44 and 45 responses.

Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved, which included sampling locations and boundaries. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements. Table 4-2 lists detonation materials.

37. 7-2, 49 **Deficiency.** This section refers to the waste inventory list which is inadequate.

Requirement. It must account for all dangerous wastes detonated or generated from the detonation at the site.

RL/WHC Response: See comment response No. 17.

Ecology Response: See NOD No. 17 response.

Ecology/RL/WHC Resolution: The inventory has been approved by all parties. Text has been revised to reflect accepted inventory

38. 7-3, 11 **Note.** It is stated that the concentrations of any dangerous waste constituents that may remain in the soil after closure would probably exist in very low concentrations.

Requirement. Specify whether the mobile laboratory will or will not be able to detect such concentrations.

No.		Comments/Response	Concurrence
		RL/WHC Response: Taken out of context, terms such as "low" or "very low" do not have quantitative significance. The intent of the cited statement in context, as indicated in the sentence that follows in the text, is to justify a conservative approach to initial sampling and analysis (as opposed to, for example, doing level I field screening initially). Method detection limits are identified on pages 7-8 and 7-9. Ecology Response: a. If initial samples at level II (EAL) indicate a "no action," confirmatory level III analyses will have to be done to verify this alternative. b. For every fifth sample, a split has to be taken and sent off for level III analyses. This will help determine validity of level II analyses as well as give some ICP/AA metals analyses. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Also through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
39.	7-3, 18	**Deficiency.** Portable field screening instruments are considered level I, not level I or II. **Requirement.** Modify text to reflect this consideration. RL/WHC Response: Accepted. See comment response No. 2.	

No.		Comments/Response	Concurrence

Ecology Response: Concur with the correction. See also NOD No. 2 response.

Ecology/RL/WHC Resolution: Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Reference to the use of portable field screening instruments will be removed.

40. 7-3, 43 **Deficiency.** It is not specified how it was determined that this was the only compound from the Toxic Characteristics List.

Requirement. Provide a thorough discussion of this determination.

RL/WHC Response: Text makes no reference to the Toxic Characteristics List. Rather, the text refers to EPA's Target Compound List (TCL). The TCL was created by EPA for use in the Contract Laboratory Program (CLP). The TCL was formerly referred to as the Hazardous Substance List. The list contains organic compounds that are quantitated during Superfund site remediations. Currently, many gas chromatograph/mass spectrometers are internally calibrated for these compounds. It was determined that methyl ethyl ketone is the only TCL compound present by comparing the items in Table 7-1 against the items include on the TCL.

Ecology Response:

a. A list from SW-846 should be used instead of TCL from CLP.

b. Address the deficiency about how methyl ethyl ketone was determine to be only compound from TCL list present at site.

Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and

No.		Comments/Response	Concurrence
		analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.	
41.	7-4, 1	**Deficiency.** There is concern for on-site calibration of instruments. Is it conceivable that the instruments may be less sensitive because of local contamination? **Requirement.** Provide a discussion to demonstrate that this concern has/or will be addressed. RL/WHC Response: The citation discusses preparation or acquisition of solutions that would be used as calibration standards (i.e., for equipment such as gas chromatograph, and GC/MS devices). These types of devices are virtually always calibrated on site, because most of them are fixed equipment. Calibration will be managed and controlled per EAL technical and operating procedures. All proposed EAL analytical procedures, will be submitted to Ecology for review and approval in advance of sampling. These types of devices are virtually always calibrated in place, insofar as they generally are fixed equipment. Ecology Response: Concur. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples.**	
42.	7-4, 18	**Deficiency.** The exclusion of Sodium Azide and the Nitrate ion from the target analyte list is not appropriate. **Requirement.** Revise the sampling and analysis plan to reflect WAC 173-303 regulation of these substances. Sodium Azide and the Nitrate ion,	

No.		Comments/Response	Concurrence

which is not environmentally benign at certain concentrations, and any regulated decomposition products shall be incorporated into the sampling and analysis plan.

Note. Due to the potential for implementing MTCA standards in the future, it may be advisable to address MTCA standards for these substances.

RL/WHC Response: Thermal treatment of sodium azide at the 218 E-8 Borrow Pit site was erroneously reported in WHC Environmental Protection Surveillance and Compliance Inspection Reports. As indicated by WHC personnel at the UMMs of April 15, 1993 and May 12, 1993, the inventory is being amended: sodium azide will be deleted. After proposed modifications, the waste inventory no longer shows that any nitrogen-containing compounds were treated at the 218 E-8 Borrow Pit site. Consequently, RL and WHC do not propose to analyze samples for nitrate ions.

Ecology Response: Refer to NOD No. 34 response.

Ecology/RL/WHC Resolution: The inventory has been corrected and approved by all parties. Text has been revised to reflect accepted inventory. Also through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements. All parties agree that Appendix IX analysis of 40 CFR part 264 will not be required at this unit.

43. 7-4, 28 **Deficiency.** Phosphoric Acid consisted of 87% of the total quantity of wastes detonated at the site (Table 4-1). Because the acid is neither combustible nor shock-sensitive, it was probably dispersed rather than treated by the detonation.

No.		Comments/Response	Concurrence
		Requirement. The acid and any regulated decomposition products shall be incorporated into the sampling and analysis plan. **Note.** Consult the Dangerous Waste regulations (WAC 173-303) for proper waste designation procedures and (the Model Toxic Control Act, WAC 173-340, for potential) cleanup standards. RL/WHC Response: See comment response No. 34. Ecology Response: Refer to NOD No. 34 response. **Ecology/RL/WHC Resolution: The inventory has been corrected and approved by all parties. Text has been revised to reflect accepted inventory. Also through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements. All parties agree that Appendix IX analysis of 40 CFR part 264 will not be required at this unit.**	
44.	7-4, 38	**Requirement.** The sampling design must be evaluated by a statistician prior to conducting any work to determine if the sampling and analyses are adequate to determine extent of contamination. Add a provision for bias sampling in areas of visual contamination, down wind areas, and deeper in pit areas, in addition to random sampling. RL/WHC Response: Current commitments call for RL and WHC to sample and analyze the near-surface soils using the EAL for analytical support. The EAL (analytical Level II) generally provides method detection limit capabilities in the low PPM range, which should compare favorably with proposed action limits for the analytes of interest.	

No.	Comments/Response	Concurrence

If the initial round of sampling should indicate that any of the analytes of interest in Table 7-1 are present at concentrations exceeding proposed action levels, then supplemental sampling will be undertaken. A new sampling arrangement would be developed for supplemental sampling, working outward from the "hot spot" locations identified previously. The supplemental sampling plan would be reviewed in advance with Ecology. Field screening methods may be applied for supplementary sampling. If RL and WHC should propose field screening methods (analytical Level I) supplemental sampling, demonstrations would be provided that the screening method(s) of choice offer adequate sensitivity to detect the analyte(s) of interest at concentrations that are statistically significantly lower then corresponding action level(s). If it is determined that field screening methods are not applicable, sampling and analysis would be carried out by the same methods proposed for initial sampling (i.e., analytical Level II.

Supplemental sampling of the near-surface soils (i.e., the uppermost 2 ft interval) would be extended outward from "hot spots" until the extent of contaminated soil is completely defined, irrespective of the initial sampling arrangement. The volume of contaminated soil (i.e., soil with contaminant concentrations exceeding negotiated action levels) would be removed in 2-ft thick layer, as discussed in Section 7.3. Afterwards, the newly exposed ground surface would be resampled for verification purposes (analytical level III). The verification sampling plan would be reviewed in advance with Ecology. If the newly exposed soil also is contaminated, the lateral extent of contamination would be determined by sampling as above, and additional soil would be removed in 2-ft lifts as necessary. This process of sampling and soil removal would be repeated as often as necessary to achieve the objective of clean closure. A final round of confirmatory sampling (analytical level III) is proposed to support a regulatory determination of clean

No.	Comments/Response	Concurrence

closure. As in other cases, the confirmatory sampling plan would be reviewed in advance with Ecology.

RL and WHC believe that contamination at the demolition sites (if present) is shallow and of limited lateral extent. The proposed plan seeks to limit the amount of sampling and associated expense in the event that this view is correct. RL and WHC are aware that the approach involves some risk-taking and cost consequences in the event that contamination is extensive and a relatively elaborate cleanup effort is required. The closure plan includes contingencies (outlined above) for working outward and downward in the soil column if contamination is discovered. RL and WHC believe that plan offers sufficient contingencies to ensure that the plan will be responsive to Ecology's regulatory interests in any event regarding the specific nature and extent of contamination at the site.

Regarding statistical evaluation of the plan: The draft plan was reviewed by a qualified statistician.

Regarding areas of visual contamination: There are no visibly contaminated areas. As discussed in Section 3.0, the sites were inspected immediately after demolition events, and any visibly contaminated areas were cleaned up.

Regarding biased sampling in the down-wind direction: Work rules in place at the time prohibited conducting demolition activities when wind speeds exceeded 35 mph (i.e., it is generally know that none of the demolition events occurred at the times when winds exceeded 35 mph). Participants at the demolition events believe that wind condition never actually exceeded 10-15 mph, although written records of weather condition were not kept. RL and WHC believes that contingencies in the existing plan are sufficient to identify distortions in contaminant

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distribution due to wind dispersal without modifications to the proposed arrangement for initial sampling.

Regarding Ecology's expressed interest in extending sampling deeper in pit areas: It is unlikely that contaminants were driven into the ground by the demolition activities. It is far likelier that chemical reaction products and any unreacted residues were released into the air (the unconfined direction in terms of the forces and pressure involved). Because contamination (if any) would have been a surface condition initially, the existence of sub-surface contamination (if any) would have been brought about by factors such as solution and leaching. RL and WHC believes that contingencies in the existing plan are sufficient to identify residual sub-surface contamination. If the uppermost 2 ft of the soil column is shown not to contain contaminant concentrations at or near to action levels, then RL and WHC do not agree there is a legitimate concern that higher concentration of contaminates traceable to the subject activities could exist at greater depths. It is not a reasonable expectation that contaminants could somehow be driven 12 ft into the ground as the result of the activities described in the closure plan.

Extensive research has been conducted at the Hanford Site regarding moisture evapotranspiration of soil moisture and infiltration (recharge) through the vadose zone. It has generally been determined, with some exceptions for isolated locations where the near-surface soils are extremely coarse, that wetting fronts generally do not penetrate to depths exceeding about 4 feet. Sampling to a depth of 12 feet would require working with either a hollow-stem auger rig or a backhoe. Either option represents a major departure (in terms of time and cost) from the proposed plan. To attempt to resolve this issue, RL and WHC would propose to sample to a depth of 4 feet at the open circled locations shown in Figures 7-1 in the plan. RL and WHC also would be

No.	Comments/Response	Concurrence

willing to offer to resample at extended depths at any location where initial sampling results indicate that contaminants are present at or close to proposed action levels.

Ecology Response: Concur with EAL as analytical support to the investigative phase (level III). See additional requirements for EAL in NOD No. 38. Refer action limit (level) to NOD No. 1 response.

The closure should proceed to achieve the performance standard of WAC 173-303-610(2) rather than be restricted by proposed plan. Adjusting sampling depth according to the initial sampling results is considered acceptable. However, initial biased sampling to 12 ft was required for at least 30% of the proposed sampling locations. It has to include the two sampling locations near the geometric center of the site. Otherwise, experimental and/or theoretical demonstrations must be furnished to show that the penetration depth of the waste explosives and byproducts from the detonation process and following precipitations is less than 12 ft under the specific geological conditions of the detonation sites.

Biased sampling in the down-wind direction will also be required unless experimental and/or theoretical demonstrations can be furnished to show that the migration distance of the waste explosives and the byproducts is negligible assuming that the wind speed is less than and/or equal to 35 mph.

Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.

No.		Comments/Response	Concurrence
45.	7-4, 48	**Deficiency.** Due to the heterogenous nature of the waste detonated at the site, and the fact that materials may have been driven to considerable depths from the explosion, contaminants are not likely to be evenly distributed. One surface sample from the approximate center is not adequate. **Requirement.** Sampling will have to be conducted not only at the surface, but also at substantial depth under the site. Refer to previous comment. **Note.** The small amount of samples proposed in this section does not appear to warrant the use of a mobile laboratory. RL/WHC Response: See comment response No. 44. Ecology Response: See NOD No. 44 response. **Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Number of samples and samples locations were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
46.	7-5, 5	**Deficiency.** It is stated that surface sampling will be conduced at two locations. This is inadequate. **Requirement.** At each sampling location, sampling and analysis for organics should be conducted at a minimum for both the top layer and the next underlying layer. RL/WHC Response: As indicated in Lines 30-33 of the same page, the purpose of the two surface samples is to evaluate the adequacy of the proposed arrangement. If residual contaminants are not identifiable in	

No.		Comments/Response	Concurrence
		the two surface (0-6 in.) samples to be taken as identified on line 5, then RL and WHC does not propose to sample and analyze this interval at the other locations. The two locations were selected to be near the geometric center of the site where the highest concentrations of residual contamination (if any) would be expected to be occur. Ecology Response: According to RL/WHC's response to NOD No. 72, the detonation pit at the site is not physically identifiable now, which means the depression has been refilled by outside materials. Thus, sampling in the soil from 0-6 in. may not even reach the true bottom of the demolition site. Revise the sampling scheme to accommodate a solution. **Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. It was agreed by all parties that wind blown deposits would be removed before sampling and that a pit the same size as the original blasting pit would be excavated before sampling took place. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
47.	7-5, 19	**Deficiency.** The text states that the soil sampling will occur to a depth of 18 inches below grade at six inch intervals. **Requirement.** In addition at each sampling location, sampling and analysis for organics will be conducted for both the top layer and the next underlying layer. RL/WHC Response: The text does not indicate that samples will be taken at 6-in. intervals. Text specifies that one sample will be taken from the 6-18 in. interval. Sampling will be carried out in conformance with EII 5.2 (as indicated on line 24). All previous RCRA sampling at	

No.		Comments/Response	Concurrence
		Hanford has been performed per this procedure since the procedure was promulgated in 1989. Ecology has regularly approved plans that specify sampling per this procedure. There are no provisions in EII 5.2 for management of soil that is removed prior to sampling. The soil would not be removed beyond the immediate vicinity of the sample location. Ecology Response: a. EII 5.2 only discusses soil sampling methodologies. In other words, it does not set criteria for sampling depths and intervals but rather to take the samples. b. Handling of removed soil is not adequately addressed. A method, such as covering the removed soil or piling it, should be given. c. Address the requirements. **Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. The Sampling and Analysis Plan (SAP) pinpoints sampling locations as well as specific depth of sampling. Handling of soil samples are briefly discussed in section 7.2.3.1, in Chapter 7 of the closure plan.**	
48.	7-5, 38	**Note.** One kilogram equals 2.2 pounds, not 2 pounds. Also, pounds is a unit of weight not volume. RL/WHC Response: Accepted. Ecology Response: Concur with the correction.	

No.		Comments/Response	Concurrence
		Ecology/RL/WHC Resolution: Section of text stating amount of soil sample required has been removed.	
49.	7-5, 49	**Deficiency.** Quantitation limits implemented as action levels must be justified. **Suggestion.** Modify Table 4-1 to incorporate columns specifying the action level associated with potential contaminants and the basis for such levels. For example, are specific action levels established from background measurements, detection limits, etc. RL/WHC Response: The citation does not state that quantitation limits would be implemented as action levels. RL and WHC does not propose quantitation limits as action levels in any case. Action levels will be prepared for inclusion in Section 6.0 of Revision 1. Proposed action levels will be health based values. Ecology Response: Refer action level to NOD No. 1 response. **Ecology/RL/WHC Resolution: Through the DQO process, action levels were defined and agreed to by all parties, as levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes (DOE-RL 1993)* and Model Toxic Control Act (MTCA) (WAC 173-340) Method B levels.**	
50.	7-6, 3	**Deficiency.** Action levels must be determined prior to sampling and analysis. The text should mention when action levels will be proposed and contaminant levels will be compared against proposed action levels. More information is needed on the site background threshold values. At present, the Hanford Soil Background Study is going on, and as far as we know, we have yet to receive the final values for various organics and inorganic of concern.	

No.		Comments/Response	Concurrence

Requirement. Modify the text to correct deficiencies. See comment 22.

RL/WHC Response: Regarding action levels, refer to NOD No. 49 comment response. Regarding the Hanford Site-wide soil background study, refer to NOD No. 22 comment response.

Ecology Response: Refer action level to NOD No. 1 response and Hanford Site-wide soil background to NOD No. 22 response.

Ecology/RL/WHC Resolution: Through the DQO process, action levels were defined and agreed to by all parties, as levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes (DOE-RL 1993)* and Model Toxic Control Act (MTCA) (WAC 173-340) Method B levels.

51. 7-6, 11 **Deficiency.** Preparatory procedures lack detail and sample preparation is neglected.

Requirement. Modify the text accordingly.

RL/WHC Response: All proposed EAL analytical methods, including information on sample preparation, will be submitted to Ecology for review and approval in advance of sampling. The requested information is not available at this time.

Ecology Response: Reject. Information requested must be provided. Incorporate into closure before submitting revision 2.

Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples.

No.		Comments/Response	Concurrence
52.	7-6, 35	**Deficiency.** Supercritical fluid extraction (SFE) is not appropriate because it has yet to be approved for use. **Requirement.** Revise text to reflect the use of approved methods of sampling and analysis. RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including SFE, will be submitted to Ecology for review and approval in advance of sampling. Ecology Response: Analytical methods must be submitted with closure plan. The closure plan can not be approved unless this information is reviewed in the context of the closure plan. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
53.	7-6, 38	**Deficiency.** X-ray fluorescence is not an approved method for metals characterization. It is only to be used as an in-field method to determine sampling locations or areas of contamination. **Requirement.** Revise text to reflect the use of approved methods of sampling and analysis. RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including XRF, will be submitted to Ecology for review and approval in advance of sampling. Additionally, the text of	

No.		Comments/Response	Concurrence

Revision 1 will describe the EAL as an analytical Level II laboratory (see NOD No. 2 comment response), and will propose XRF as an analytical Level II application.

Ecology Response: Analytical methods must be submitted with the closure plan. The closure plan can not be approved unless this information is reviewed in the context of the closure plan.

Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed (including the use of XRF). Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.

54. 7-6, 45 **Deficiency.** The discussion of the configuration of series does not address potential impacts on analytical results (i.e., burn off organics before analyzing for them) from variations in the configuration.

Requirements. Address the influence of the configuration of the series on the analytical results.

RL/WHC Response: Accepted. "...in series." should read"...in parallel."

Ecology Response: Since a gas chromatograph unit can only do one test at each specific time, give a more detailed explanation about the "parallel" staff.

Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite

No.		Comments/Response	Concurrence
		laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.	
55.	7-6, 47	Detection limits for Volatile Organics in ground water is 10 micrograms per liter according to SW-846. **Requirement.** Address why the detection limit presented here is significantly higher. RL/WHC Response: Detection limit in text of 100 micrograms per kilograms is for soil. Method detection limits for water and soil are not interchangeable. Ecology Response: In SW-846-8240 (VOA method using GO/MS), volatile compounds analyzed vary in detection limits from compound to compound. The response only recognizes the highest DL. **Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. Sample analysis will be performed by an offsite laboratories capable of EPA analytical level III.**	
56.	7-6, 50	**Deficiency.** Procedures for calibration of analytical equipment is said to be based on mobile lab and published EPA procedures. The concern is that combining the procedures could allow for manipulation of performance and not be consistent with EPA requirements.	

No.		Comments/Response	Concurrence

Requirement. Provide supporting evidence that these procedures will be consistent with EPA requirements.

RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, will be submitted to Ecology for review and approval in advance of sampling.

Ecology Response: Analytical procedures must be submitted with closure plan. The closure plan can not be approved unless this information is reviewed in the context of the closure plan.

Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.

57. 7-7, 26 **Deficiency.** Using unapproved methods may lead to unacceptable data.

Suggestion. Do not rely solely on this procedure. See comment 52.

RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including SFE, will be submitted to Ecology for review and approval in advance of sampling.

Ecology Response: Analytical procedures must be submitted with closure plan. The closure plan can not be approved unless this information is reviewed in the context of the closure plan.

No.		Comments/Response	Concurrence

Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.

58. 7-7, 34 **Deficiency.** X-ray fluorescence is not an approved method for metals characterization. It is only to be used as an in-field method to determine sampling locations or areas of contamination.

Also the atomic number of Sodium is 11 and Phosphorous is 15. If the detection limit is atomic number 11, that is too close to target values and may introduce significant error in the analytical data.

Requirement. Revise text to reflect the use of approved methods of sampling and analysis. Consider contaminants when selecting analytical methods.

RL/WHC Response: Phosphorus is not a proposed analyte of interest in Table 7-1. Otherwise, Ecology's concern is noted in general. All proposed EAL analytical methods, including XRF, will be submitted to Ecology for review and approval in advance of sampling. Additionally, the text of Revision 1 will describe the EAL as an analytical Level II laboratory (see NOD No. 2 comment response), and will propose XRF as an analytical Level II application.

Ecology Response: See NOD Nos. 53 and 34 responses.

Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory and it's EPA analytical II

No.		Comments/Response	Concurrence
		instrumentation capabilities will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.	
59.	7-7, 39	**Deficiency.** Detection limits for target RCRA metals are set to 20 micrograms per gram. Do these detection limits meet the Dangerous Waste requirements of background levels for characteristic and listed wastes and designation limits for state only wastes? **Requirement.** Compare the detection limits with the WAC 173-303 regulatory levels. RL/WHC Response: Citation is to a paragraph that provides general information on the XRF method. This NOD comment is moot because there are no metal analytes of interest for the 218 E-8 Borrow Pit Site and no XRF analyses are proposed (see Table 7-1). Ecology Response: Whether it is for general information or reality, the description should be as accurate as possible, otherwise it may send the wrong messages to the public. Furthermore, if the statement is not related to the document, delete it. Don't just copy it from other demolition closure plans. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory and it's EPA analytical II instrumentation capabilities will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified**	

No.		Comments/Response	Concurrence
		and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.	
60.	7-7, 44	**Deficiency/Requirement.** See previous comment. RL/WHC Response: Citation is to a paragraph that provides general information on the IC analyses. This NOD comment is moot because there are no ion analytes of interest for the 218 E-8 Borrow Pit Site and no IC analyses are proposed (see Table 7-1). Ecology Response: See NOD No. 59 response. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory and it's EPA analytical II instrumentation capabilities will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
61.	7-8, 16	**Deficiency.** The on-site mobile laboratory's capabilities are not equivalent to analytical level III. Verification analysis must be performed by EPA level III criteria (SW-846), which can only be performed by an EPA certified laboratory. The mobile lab provides only level II analyses. **Requirement.** Unless certified, the mobile lab should only be used to aid in determining sampling locations and plume mapping during remediation. RL/WHC Response: Accepted. See comment response No. 2.	

No.		Comments/Response	Concurrence
		Ecology Response: See NOD No. 2 response. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory and it's EPA analytical II instrumentation capabilities will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
62.	7-8, 52	**Requirement.** On-site mobile laboratory calibration procedures must be fully compliant with EPA requirements. RL/WHC Response: Accepted. See comment response No. 2. Ecology Response: Concur. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory and it's EPA analytical II instrumentation capabilities will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
63.	7-9, 10	**Deficiency.** Calibration of instruments only once a day, or shift, may introduce significant error. Calibration may be affected by varying environmental conditions throughout the day, such as a change in temperature or humidity.	

No.		Comments/Response	Concurrence

Requirement. Calibration schedules must respond to ambient environmental fluctuations.

RL/WHC Response: The intent of RL and WHC on the issue of calibration is to conform to the statements appearing on page 7-8, lines 50, and Section 7A-6 of the QAPjP. The sentence on page 7-9, lines 10-12 will be eliminated from Revision 1 to avoid any potential conflict or the appearance of conflict between these statements.

Ecology Response: Concur.

Ecology/RL/WHC Resolution: The Quality Assurance and the Quality Control sections of Chapter 7 was deemed repetitious with the Quality Assurance Project Plan in Appendix 7A and therefore removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples.

64. 7-10, 33 **Requirement.** All clean closure sample data should be compiled in Contract Laboratory Procedure (CLP) format. Consult SW-846, chapter 1, for guidance on the forms which Ecology will accept.

RL/WHC Response: The text already cites SW-846, Chapter 1 for guidance on documentation (see Lines 45-46). CLP format is not a requirement of WAC 173-303.

Ecology Response: It is true that WAC 173-303 does not require the CLP format. But, since the RCRA unit is also located within a CERCLA operable unit, the CLP format will be required in the remedial action by CERCLA. It is advised, therefore, that the test results should be not less than 10% CLP deliverable SW-846.

Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and

No.		Comments/Response	Concurrence

analytical methods were identified and agreed to by all parties. WHC should receive stand alone SW-846 sample data packages in a format comparable to CLP format.

65. 7-11, 32 **Deficiency.** WAC 173-303-610 is not included in the citations consulted for the development of soil cleanup action levels.

Requirement. To be considered clean closure, soil contamination must be less than or equal to background or designation limits for state only wastes. If soil contamination concentrations are greater than those stated, they would be considered a modified landfill closure. This would require compliance with reduced landfill requirements. Also, see comment 23.

RL/WHC Response: See comment response Nos. 23 and 24.

Ecology Response: Refer action level to NOD No. 1 response. Refer HSBRAM to NOD No. 24 response. Refer post-closure care to NOD Nos. 19(b) and 76 response.

Ecology/RL/WHC Resolution: Through the DQO process all parties agreed that to meet criteria for clean closure of the 218 E-8 Borrow Pit Demolition Site, the soil sampling and analytical results must verify that the levels of discarded explosive chemical products derived from the 218 E-8 Borrow Pit Demolition Site operations are below action levels. Agreed action levels are defined as levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes* and Model Toxic Control Act (MTCA) Method B levels.

66. 7-12, 12 **Deficiency.** The determination of sampling locations by using random algorithm for initial characterization as specified in section 7.2.3 is

No.		Comments/Response	Concurrence
		acceptable. But the location of sampling points for calculation of the volume of contaminated soil demands a systematic protocol. Sampling plans with well defined grid spacing, locations, etc. might vary depending on the results obtained in the initial characterization. **Requirement.** The sampling plan will require approval prior to implementation. RL/WHC Response: Accepted. Ecology Response: Concur. **Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
67.	7-12, 31	**Deficiency.** The proposed two foot vertical depth for sampling is inadequate. **Requirement.** Significantly increase the proposed sampling depth. Consider twelve foot depth. RL/WHC Response: See comment response No. 44. Ecology Response: See NOD No. 44 response. **Ecology/RL/WHC Resolution: Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods, sample locations and depths were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	

No.	Comments/Response	Concurrence
68.	7-13, 12 **Note.** The application of water during removal to control dust needs careful examination and will depend on the contaminant of concern. There is a good chance that contaminants can migrate with water downward during the process. This is especially so since excavation is limited. Other dust control devices may have to be applied depending on the nature of the contaminants. **RL/WHC Response: Accepted. (No change to text at this time.)** **Ecology Response: Concur.**	
69.	7-14, 15 **Deficiency.** Regulatory requirements require that verification sample analysis be done at level III or IV. A mobile laboratory does not qualify. **Requirement.** Verification analyses must be done by EPA approved methodology, some of which can only be done in a stationary laboratory. RL/WHC Response: Accepted. See comment response No. 2. Ecology Response: Concur. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples.**	
70.	7-15, 14 **Deficiency.** A closure plan can be amended prior to final closure, but only with approval from the lead regulatory agency, which is Ecology in this case. This requirement was ambiguously presented in the closure plan.	

No.		Comments/Response	Concurrence
		RL/WHC Response: See page 7-15, line 17-20 for clarification. **Ecology Response: Concur.** **Ecology/RL/WHC Resolution: No change.**	
71.	F7-1	**Requirement.** Provide a direction arrow. RL/WHC Response: Accepted. Ecology Response: Concur. **Ecology/RL/WHC Resolution: Old Figure 7-1 depicting a proposed sampling grid will be removed since it has been nullified by the approved Sampling and Analysis Plan.**	
72.	F7-1	**Requirement.** Show the location of the detonation pit. RL/WHC Response: Presently, there is no physically identifiable detonation pit at the site. However, the depression was still evident at the time the fenced boundary was established. Figure F7-1 represents precise coordinates of surveyed monuments that were placed approximately 10 feet out from the present 20 by 20 foot fence boundary. The reason the site was surveyed and the monuments located 10 feet outside the fence boundary was to ensure a wide, complete and surveyed sampling area. The 20 by 20 foot fence site boundary can be approximated and overlained on top of this figure. Ecology Response: The location of the detonation site needs to be shown on the figure.	

No.		Comments/Response	Concurrence
		Ecology/RL/WHC Resolution: Old Figure 7-1 depicting a proposed sampling grid will be removed since new sampling locations are provided by the approved Sampling and Analysis Plan. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.	
73.	F7-1	**Deficiency.** Sampling locations do not cover downwind areas. **Requirement.** Sampling must be done to characterize all potentially contaminated areas. RL/WHC Response: See comment response No. 44. Ecology Response: See NOD Nos. 44 and 45 responses. **Ecology/RL/WHC Resolution: Old Figure 7-1 depicting a proposed sampling grid will be removed since it has been nullified by the Sampling and Analysis Plan. Through the DQO process all sampling and analytical concerns were resolved and sampling locations agreed to. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
74.	F7-1	**Deficiency.** Surface layer sampling in the middle of the site (probably the pit) is not appropriate. The contamination of wastes in the center of the site is suspected to be the greatest and deepest. **Requirement.** Modify sampling plan and figure to address deficiency. RL/WHC Response: See comment response No. 44.	

No.		Comments/Response	Concurrence
		Ecology Response: See NOD Nos. 44 and 45 responses. **Ecology/RL/WHC Resolution: Old Figure 7-1 depicting a proposed sampling grid will be removed since new sampling locations and sample depths are provided by the approved Sampling and Analysis Plan. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
75.	T7-1	**Deficiency.** This table is inadequate. **Requirement.** Regulated decomposition and reaction products must be included in the list of target analytes. Appropriate methodologies, action levels, and detection limits need to be listed. Also list method modifications and metal analysis. RL/WHC Response: Regarding <u>decomposition and reaction products</u>: Recognized decomposition and reaction products are identified and discussed on page 7-4. Recognized products that may be constituents of potential regulatory concern are listed in the table. (Also refer to NOD No. 17 comment response.) Regarding <u>methodologies and method modifications</u>: Methodologies for initial sampling and analysis in the EAL are identified in the table to the extent that RL and WHC are able to do so at this time (in advance of issuance of EAL procedure manuals). Formal EAL analytical procedures are in preparation. Copies of all EAL analytical procedures will be submitted to Ecology for review and approval in advance of sampling. Anticipated relationships between EAL procedures and published EPA methods (and other methods) are discussed in Section 7.2.4.	

No.	Comments/Response	Concurrence

Regarding action levels: A table listing proposed action levels for the analytes of interest identified in Table 7-1 will be prepared for inclusion in Section 6.0 of Revision 1.

Regarding detection limits: Practical quantitation limits (PQLs) are listed in Table 7A-1 of the QAPjP. The same analytes are listed in Tables 7-1 and 7A-1. An explanatory note will be attached to Table 7-1 indicating where the PQL information is provided.

Regarding metal analytes: No metal analytes are proposed.

Ecology Response:

a. Refer to NOD No. 20 response for the issue of decomposition and reaction products.

b. Give the specific method no. from SW-846.

c. Refer the action level to NOD No. 1 response.

d. PQLs are different for different materials at different laboratories. Thus, relate them to each analyte and the laboratories which will be used to test them.

Ecology/RL/WHC Resolution: Table 7-1 depicting a proposed Analytes of Interest will be removed since it has been nullified by the Sampling and Analysis Plan Agreements. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.

No.		Comments/Response	Concurrence
76.	8-2, 15	**Deficiency.** This is not an adequate explanation of potential integration of RCRA with CERCLA. **Requirement.** If such an approach is to be considered, a much more complete discussion must be provided. Yearly inspection of the site until CERCLA remediation is not adequate. Methods to integrate sampling and analysis requirements, minimize the migration of wastes, and security of the site until remediation would have to be developed. RL/WHC Response: Yearly inspection is a minimal base line. Actual inspection intervals will not be determined until after sample results are received and evaluated. If it is determined that post-closure is necessary than a detailed and specific plan will be developed. Ecology Response: Whether there is integration between RCRA and CERCLA or not, 218-E-8 BPDS must meet the postclosure care requirements of WAC 173-303-680(2) if the contaminated soils or ground water cannot be completely removed or decontaminated during closure. See also NOD No. 19 response. **Ecology/RL/WHC Resolution: As long as the 218 E-8 Borrow Pit Demolition Site is a TSD unit the requirements of RCRA will be addressed.**	
77.	Appendix	**Comment.** A general comment about the appendix is that it appears lacking. **Suggestion.** Information about process knowledge, spill/occurrence reports, and the detonation event (i.e., a description of the actual event and environmental conditions) would be helpful. RL/WHC Response: The requested information has not been provided in any previous QAPjP prepared by RL and WHC. Process knowledge information	

No.		Comments/Response	Concurrence

has already been provided in Chapter 3 of the closure plan. There were no spill/occurrence to report and the detonation event is described in other locations in the closure plan.

Ecology Response: The information required is for the purpose of understanding this specific document. It is not comparable to whatever has been done elsewhere. Without thorough explanation, it would be very difficult to fully assess the impact done to the environment by the demolition event. For example, without the evidence of legitimate documentation, simply changing the waste inventory for the site when questioned by the regulators is not acceptable.

Ecology/RL/WHC Resolution: The inventory has been agreed to and approved by all parties. Text has been revised to reflect accepted inventory. Detail process knowledge and the detonation event has been revised and is located in Chapters 3 and 4.

78. 7A-1, 26 **Deficiency.** Surface sampling is specified as the objective of the investigation. This is not appropriate.

Requirement. The objective of the investigation is to determine the extent of contamination at the site. Revise the text accordingly.

RL/WHC Response: Accepted. Lines 25-27 will be revised to read: "The principal objective of initial (investigative) sampling will be to identify the presence and extent of dangerous waste constituents in surface soils at the site relative to levels of potential regulatory concern."

Ecology Response: Concur with the addition of the principal objective of initial (investigative) sampling. However, the depth of surface soil

No.		Comments/Response	Concurrence
		should be given. Refer the requirement on initial sampling depth to NOD No. 44 response. **Ecology/Rl/WHC Resolution: Text was revised to read: "The principal objective of phase one investigative sampling is to facilitate a RCRA clean closure of the site by verifying that the concentrations of all detonation activity contaminants are at or below action levels." Specific sampling locations and sample depths have been agreed to and are provided by the Sampling and Analysis Plan.**	
79.	7A-1, 42	**Requirement.** If remediation is required, confirmatory samples are required and must be done in an EPA approved laboratory at level III analysis, not a mobile laboratory. RL/WHC Response: Accepted. See comment response No. 2. Ecology Response: See NOD No. 2 response. **Ecology/RL/WHC Resolution: Throughout the closure plan references to using the mobile onsite laboratory will be removed. Offsite laboratories capable of EPA analytical level III will be used for all soil samples. Through the DQO process all sampling and analytical concerns were resolved. Constituents of concern and analytical methods were identified and agreed to by all parties. See the Sampling and Analysis Plan (SAP) for specific agreements.**	
80.	7A-2, 1	**Suggestion.** EPA-QZMS-005/80, "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," should also be referenced. **RL/WHC Response: Accepted.** **Ecology Response: Concur.**	

No.		Comments/Response	Concurrence
81.	7A-10	**Deficiency.** The reference provided for validation procedures, "Data Validation Procedures for Chemical Analysis (WHC-SD-EN-SPP-002)," is a validation procedure for Contract Laboratory Program (CLP) sample data, not analyses performed under SW-846. The correct reference should be: Sample Management and Administration (WHC-CM-5-3)." **Requirement.** Revise the text to correct the error. RL/WHC Response: Accepted. Ecology Response: Concur **Ecology/RL/WHC Resolution: Data Validation Procedures for Chemical Analyses (WHC-SD-EN-SPP-002) is a document that provides procedures to WHC staff and subcontractors tasked with the validation of chemical analytical data produced as the result of Hanford Site environmental investigations. This document is a supplement to the Sample Management and Administration document (WHC-CM-5-3) which includes validation procedures for sample data performed under SW-846.**	